

haud albo terminatis, et reetricibus exterioribus brunneis pogonio externo isabellino marginato, haud albis, distinguenda.

*Hab.* North-east Africa (*Brehm, Heuglin*), Palestine (*Tristram*), Caucasus (*Ménétriés*), ?Persia (*Defilippi*), Turkestan (*Dode*), Cashmere (*Jerdon*), North-west India (*Blyth, Hume*).

---

XX.—On a new Species of Plesiosaurus from the Portland Limestone\*. By HARRY G. SEELEY, F.G.S., St. John's College, Cambridge.

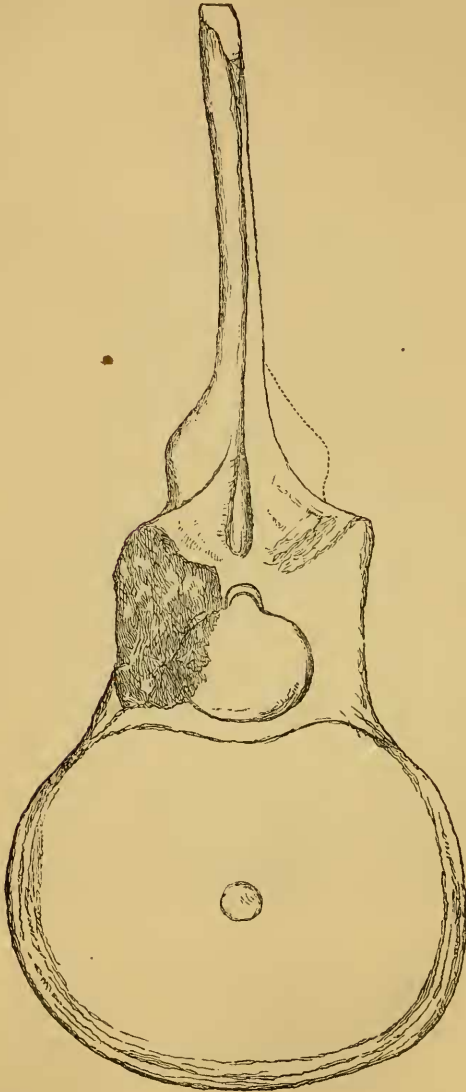
WHEN the Index to the Reptilian Remains from the Secondary strata preserved in the Woodwardian Museum was written, an examination of many examples of Plesiosauria had shown that, with perfect specimens, good characters were available by which the overgrown genus *Plesiosaurus* might be separated into natural genera. Hence, when recording the few remains from the Portland Oolite (p. 91), finding the characters of *Pliosaurus* blended to some extent with those of *Plesiosaurus*, I did not feel it easy to volunteer an opinion on generic affinities.

Since then, Prof. Owen's memoir in the Palæontographical Society's volume (1869) on *Pliosaurus portlandicus* has been published; and in the absence of associated vertebræ showing the distinctive Pliosaurian characters of the neural arch and centrum, I cannot but feel less confidence than Prof. Owen expresses in regarding the paddle there figured as the type of the Pliosurian hind limb. In some large-headed Plesiosaurs, such as *Plesiosaurus macrocephalus* (Owen), the tibia and fibula, and ulna and radius, become shorter than in small-headed species; and although the tarsus in Prof. Owen's fossil is very similar to that of Pliosaurus from the Kimmeridge Clay, the femur is more like *Plesiosaurus*; and it is not impossible that the Portland specimen may typify a new genus. All the limb-bones from the Portland Limestone, so far as known to me, are pliosauroid, while all the vertebræ are pliosauroid.

Therefore with some interest we received from an indefatigable correspondent, Mr. W. R. Brodie, some vertebræ which demonstrate, as conclusively as vertebræ can, the existence in the Portland Limestone of a new species of *Plesiosaurus*. They were found by Mr. Brodie at the Winspit

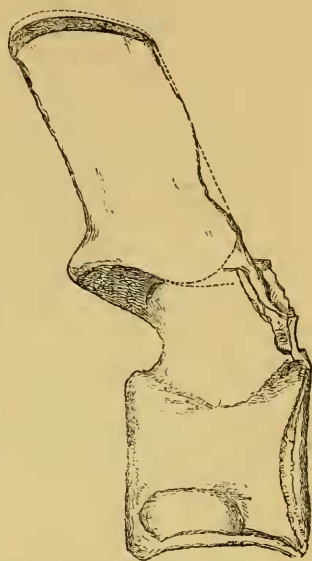
\* Communicated by the author, having been read before the Cambridge Philosophical Society, May 30, 1870.

quarry, in the Isle of Purbeck, and are from the cervical and pectoral regions.



Cervical vertebra of *Plesiosaurus winspitensis*, nat. size.  
Portland Oolite, Winspit, Purbeck.

*Cervical vertebra.*—The centrum measures 2 inches from back to front at its base, and is slightly longer under the neural arch. The articular surface of the centrum is elliptical,  $2\frac{3}{8}$  inches broad, and nearly 2 inches high. It is very slightly and regularly concave, so as to appear nearly flat; and in the centre there is a small sudden depression, as in *Pliosaurus brachyspondylus* (Owen). The margin under the neural canal is concave; and the remainder of the margin of the articular surface of the centrum is obliquely bevelled, as is often seen in cervical vertebræ of Plesiosaurs. The base of the centrum is concave from back to front, in which direction there is a moderate ridge mesially, with the usual nutritive foramen on each side of it; the interspace between these foramina is a quarter of an inch. The base of the centrum is separated from the side by the articulation for the cervical rib. This articulation is transversely elliptical,  $\frac{5}{8}$  of an inch high, and more than an inch long; it is deeply concave from front to back, and nearer to the posterior than to the anterior articular surface of the centrum, as is usual. On the left side of the centrum the cervical rib is preserved; it is about  $\frac{3}{4}$  of an inch long, much compressed from side to side, directed downward and outward and backward, and tapering from back to front. The side of the centrum is smooth, gently concave between the back and front, where it terminates in the thickened margins of the articular surfaces; it is convex from below upward.



Side view of the same cervical vertebra of *P. winspitensis*, one-half natural size.

The suture between the neural arch and the centrum remains persistent; but the two neurapophyses are anchylosed into one mass, and do not remain distinct as in *Pliosaurus*. The whole neural arch is directed obliquely backward, much compressed from side to side; the neural spine is long, as in *Plesiosaurus*; and the arch does not articulate with the centrum by ovate pedicles as in *Pliosaurus*; so that both in

the centrum and the neural arch the characters are Plesiosaurian.

The height of the neural arch from the suture to the summit of the spine, measured at the side, is  $4\frac{3}{8}$  inches. The height from the base of the centrum to the posterior zygapophysis is 3 inches. These articular facets are flat, and look downward and outward. A moderately elevated transverse ridge on each side connects them with the anterior zygapophyses. The neural spine may be  $\frac{3}{8}$  of an inch thick where thickest, but it is compressed to a sharp edge at both the anterior and posterior margins; towards its base it measures  $1\frac{5}{8}$  inch from front to back; but it narrows to about  $1\frac{1}{4}$  inch at the free end, which is truncated so as to be convex from front to back, and parallel to the base of the centrum.

The neural canal is small, ovate, broader than high, being about  $\frac{1}{2}$  an inch high and  $\frac{3}{4}$  of an inch broad. The greatest width of the neural arch, from side to side in front across the neural canal, is  $1\frac{5}{8}$  inch.

The distance, at the side of the vertebra, from the base of the neural arch to the facet for the rib is  $\frac{3}{4}$  of an inch. It is difficult to refer the specimen to its correct position in the neck; but I regard it as a late cervical, probably about the 7th from the end of the neck.

The species appears to be distinct from any yet described—though, from the uncertainty of its exact position in the neck, the specific value of its characters cannot be accurately estimated. The species to which it approaches most closely is *Pl. megadeirus*, from which it appears to differ in the centrum being longer and flatter on the articular surface, with a larger lateral margin to the articulation and a relatively shorter articulation for the cervical rib, which is placed further from the anterior margin of the centrum.

In the 31st cervical vertebra of *Pl. megadeirus* the measurements of the centrum are:—

Length of centrum at its base . . . . .	2 inches.
Length of centrum through the centre . . . . .	$1\frac{3}{8}$ inch.
Width of centrum over posterior articular surface . . . . .	$3\frac{1}{8}$ inches.
Width of centrum in front . . . . .	3 "
Depth of centrum . . . . .	$2\frac{1}{2}$ "

The corresponding measurements of this vertebra are:—

Length of centrum . . . . .	2 inches.
Width of centrum . . . . .	$2\frac{1}{2}$ "
Depth of centrum . . . . .	2 "

[In the 27th cervical vertebra of *Plesiosaurus Manselii*, Mr. Hulke gives the measurements as :—

From front to back of centrum . . . . .	2½ inches.
Width of centrum . . . . .	4 „
Depth of centrum . . . . .	3½ „

and in the pectoral region the distinctive proportions of width and depth become slightly more marked.

The more concave articular face of the centrum and less thickened peripheral margin of the Kimmeridge species confirm the specific distinction of the types.]

*Pectoral vertebra.*—The pectoral vertebra of *P. winspitensis* appears to measure—

From front to back of the centrum . . . . .	1½ inch.
Width of centrum . . . . .	2½ inches.
Depth of centrum . . . . .	1¼ inch.

Thus the form of the articular surface of the centrum is broader from side to side than in the neck; it is also a little flatter. The neural spine is partly broken away; but, unless it be in a slightly greater development of the vertically elongated tubercle for the rib, there is nothing specially remarkable in the neural arch.

The specimens are still partly imbedded in the matrix, and the mass shows the impressions of portions of other vertebræ of the same individual. As a means of drawing attention to a locality which is likely to reward an explorer, I would record the species as *Plesiosaurus winspitensis*.

XXI.—*On the Condors and Humming-birds of the Equatorial Andes.* By JAMES ORTON, of Poughkeepsie, N. Y.\*

THE condor has been singularly unfortunate in the hands of the curious and scientific. Fifty years have elapsed since the first specimen reached Europe; yet to-day the exaggerated stories of its size and strength are repeated in many of our text-books, and the very latest ornithological work leaves us in doubt as to its relation to the other vultures. No one credits the assertion of the old geographer Marco Polo, that the condor can lift an elephant from the ground high enough to kill it by the fall, nor the story of a traveller, so late as 1830, who declared that a condor of moderate size, just killed, was lying before him, a single quill-feather of which was twenty

\* From a separate impression communicated by the Author.